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Notice of Allowability	Application No.	Applicant(s)	
	10/619,190	COLAIANNA ET AL.	
	Examiner	Art Unit	
	Henry S. Hu	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2nd RCE of November 14, 2005.
2. ☒ The allowed claim(s) is/are 1-7.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

1. This Office Action is in response to the 2nd RCE Amendment and its Declaration (written by **Giulio Brinati**) both filed and entered on November 14, 2005. With 2nd RCE amendment, **Claim 1 was amended**, while no new claim was added. To be more specific, parent **Claim 1** was twice-amended to incorporate “additional two limitations” as: (A) “such a dipolymer (TFE/FMVE) is **melt processable at an extrusion rate higher than 800 m/minute**”, and (B) “such a dipolymer has **mechanical properties as specified and is obtained by using a chain transfer agent** in a sufficient amount”. The Applicants allege that support of claim amendment is as disclosed on the top section of page 3 in Remarks. **Claims 1-7 are now pending** with only one independent claim (Claim 1). An action follows.

2. Claim rejections under Final Office Action (for 1st RCE) filed on June 16, 2005 are now removed for the reasons given in paragraphs 3-11 thereafter.

Allowable Subject Matter

3. Claims 1-7 are allowed.

4. The following is an examiner's statement of reasons for allowance: The above Claims 1-7 are allowed over the closest references:

5. *The limitation of amended parent Claim 1 of present invention relates to “melt processable” copolymers at an “extrusion rate higher than 800 m/minute”, formed by TFE and FMVE, having Melt Flow Index (MFI) (ASTM D 1238) from 8 g/10 min to 50 g/10 min obtained by using in the polymerization step a chain transfer agent in an amount so to obtain the above MFI, having mechanical properties unchanged after thermal aging for 7 days at 232 °C, said copolymers having the following composition: FMVE in per cent by moles from 3.7% to 5.2% the percent TFE moles being the complement to 100% of the FMVE moles. See other limitations of dependent Claims 2-7.*

6. In view of the Applicants' 2nd RCE amendment, the twice-amended parent Claim 1 now carries a combination of two “additional” limitations on obtained such a thermally stable and melt processable “dipolymer” made from monomers of TFE and FMVE (3.7% to 5.2 mole%) as: (A) “such a copolymer (TFE/FMVE) is melt processable at an extrusion rate higher than 800 m/minute”, and (B) “such a copolymer has mechanical properties as specified and is obtained by using a chain transfer agent in a sufficient amount”. It is noted that only “dipolymer” of TFE and FMVE is involved according to the statement on monomer ratio in Claim 1.

With respect to the limitation on MFI being 8 g/10 min to 50 g/10 min, Declaration in four pages written by **Giulio Brinati** and filed on November 14, 2005 discloses that MFI is clearly an essential parameter for extrusion of fluorinated polymers to be useful for insulation

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of LAN cable. Some working examples along with comparative examples having MFI inside and outside the claimed number (**8 g/10 min to 50 g/10 min**) are provided therein to show and clear but **unexpected** result (see page 4 bottom section to page 5 top section).

7. In view of the fact that parent **Claim 1** has been twice amended so that now require additional two limitations on the issue of “**melt processable at an extrusion rate higher than 800 m/minute**” and “**using controlled chain transfer agent for polymerization**”, the previous 102 (b)/103(a) for Claims 1-2 and 6-7 can not sustain any more. Although Pucciariello has disclosed the claimed copolymer of **TFE and FMVE (4.0 mol%)**, MFI is not disclosed at all.

Additionally, in view of the fact that Pucciariello's copolymer has a higher molecular weight (which would induce a lower MFI), one may believe that **chain transfer agent is not used** or suggested in the polymerization process as already pointed out by the Applicants.

8. As exactly pointed out by the Applicants in page **5** of Remarks, 103 rejection for Claims 3-5 do not stand for obviousness since secondary reference **Abulseme can not fix the deficiency of primary reference Pucciariello**. As discussed earlier, **Abulseme** only discloses that fluorinated copolymers can be prepared by comprising TFE and PMVE, the advantage is such copolymers can be useful for coating electrical cables by melt extrusion (column 1, line 4-6). No claimed MFI or using chain transfer agent to control the desired MFI is disclosed or suggested.

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9. In a close examination of four references cited as “X” in the Application’s priority document (MI20021561) (now is EP-1,382,620 A1 to Colaianna et al.), the examiner confirms that EP-979,832 A, US-5,760,151 A, EP-818,489 A, and EP-633,274 A all fail to teach or fairly suggest such a combination of limitations for “dipolymer” of TFE and FMVE.

Additionally, the present invention has shown in examples along with some comparative examples for a specific emulsion polymerization process with specific “dipolymer” of TFE and FMVE (see pages 10-23 for examples 1-7 and controls along with its Tables 1-3; also see **Declaration** written by Giulio Brinati). Therefore, all the above-mentioned references, in combination or alone, does not teach or fairly suggest the limitations of present invention.

10. After further examination and search, the examiner found the following prior art did not teach the claimed limitation:

US Patent No. 6,545,111 B2 to Colaianna et al. only discloses the preparation of thermoprocessable fluorinated copolymers which is essentially formed from three monomers as: (A) TFE, (B) PMVE or FMVE, and (C) a perfluorodioxide monomer having formula (I) (abstract, line 1-20; column 2, line 64 – column 3, line 28). PMVE or FMVE is used in 4.5-8.5 wt%, which may be overlapping with the claimed 3.7-5.2 mole%. However, such a copolymer is only a terpolymer and not a dipolymer at all. Additionally, no claimed MFI or using chain transfer agent to control the desired MFI is disclosed or suggested. Therefore, Colaianna fails to teach or fairly suggest the limitations of present application.

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11. The two key issues, regarding making a thermally stable and melt processable “dipolymer” from TFE and FMVE (3.7% to 5.2 mole%) as: (A) “such a copolymer (TFE/FMVE) is melt processable at an extrusion rate higher than 800 m/minute”, and (B) “such a copolymer has mechanical properties as specified and is obtained by using a chain transfer agent in a sufficient amount”, cannot be overcome by any or the combination of the above references, therefore, the present invention is novel.

12. As of the date of this office action, the examiner has not located or identified any reference that can be used singularly or in combination with another reference including the above references to render the present invention anticipated or obvious to one of the ordinary skill in the art. Therefore, parent composition **Claim 1** is allowed for the reason listed above. Since the prior art of record fails to teach the present invention, the remaining pending dependent **Claims 2-7** are passed to issue.

13. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu** whose telephone number is (571) 272-1103. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization

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where this application or proceeding is assigned is (571) 273-8300 for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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December 22, 2005



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